March 17, 2006 (Revised March 22, 2006)
Abstracts for Agenda Topics & Technical Contacts

Agenda Topics, Contacts, & Abstracts

Agenda Topic	Technical Contact(s)
Wheelload Weigher Calibrations	• Jim Gownley, PA • Greg Boers, CA • Harry Moody, HJM Enterprises
Abstract: Wheelload weighers are designated as Class IV Scales (HB 44) and are used for law enforcement activities, typically truck weighing. Calibration of these scales is often done by metrology personnel but may also be done under field conditions. Laboratories typically test the scales using one of three types of standards 1) static (dead) weights, 2) proving rings, or 3) load cells. This session will touch on test methods, traceability hierarchy, sources of error and uncertainty analysis, and measurement assurance. Possible references: PA Testing Manual; ASTM E-74; Handbook 44 and Handbook 112 Examination Procedure Outlines (EPOs). Possible objectives: implement procedures to ensure accurate and traceable measurements; understand differences and requirements of the standards. This session willl be divided into 4 sections, with the last section being a panel discussion on issues related to these calibrations.	
Thermometry	• Tom Wiandt, Hart Scientific • Jeff Kelly, ICL
Abstract: This session will cover the basics of calibrating thermometers (primarily liquid-in-glass or simple digital thermisters/thermocouples) of the type required for support to weights and measures applications (as noted in Handbook 105-6) and the care, handling, and calibration and uncertainty requirements when thermometers are used as supporting instruments for environmental monitoring and for corrections to calibrations in other parameters. Possible objectives: know how to perform basic thermometer inspections and calibrations and understand how to assess measurement uncertainty for use and calibration.	
Time & Frequency	• Mike Lombardi, NIST • Jeff Gust, Quametec Corporation
Abstract: This session will cover the basic calibration procedures for stopwatch and timer calibrations and frequency topics (like radar devices and tuning fork calibration). Likely References: Handbook 44, 105-5, SP 960-12. Possible objectives: Perform calibrations and uncertainty estimates accurately.	
Mass Calibration	• Jose Torres, PR
Abstract: This session will review the basic calibration procedures and topics of interest in NISTIR 6969 and on the Basic Mass CD-ROM. Avoiding common errors and pitfalls in basic and intermediate mass calibrations is an essential objective. Consideration will be given to the impact and implication of procedural deviations.	
Volume Calibration	• Dan Newcombe, ME • Dan Wright, WA
Abstract: This session will cover basic volume transfer calibration procedures (SOP 16, 17, 18, 19, 20), concepts, and the validation of spreadsheets that are used. Possible objectives: perform accurate and traceable volume transfer calibrations; maintain suitable calibration transfers (hierarchy) and calibration intervals; use a standardized spreadsheet and be able to follow the validation steps; perform good uncertainty analyses. This session will be divided into 4 sessions, with the first 3 being procedure related and 1 dealing with the WA spreadsheet.	
Quality System Topics	• Barbara Belzer, NIST • Elizabeth Gentry, NIST
Abstract: This session consists of three components covering new management system criteria, frequently encountered "tripping points" and the implementation process. The first presentation will highlight new ISO 17025:2005 and HB 143:2007 (DRAFT) criterion. Implementation deadlines will also be discussed.	

The second presentation will highlight common barriers and frequently observed management system documentation problems. The session concludes with small group break-out sessions. Practical case studies are designed to familiarize laboratory personnel with the new criterion and engage in action plan development to promote effective management system implementation.	
Uncertainty – Basic	• Georgia Harris, NIST
Abstract: Review the basic concepts in SOP 29. The session will focus the majority of time on Steps 2 and 3 (Identifying and Quantifying). It will be an attempt to answer: Where does all of the information come from in doing a good uncertainty analysis (both references and quantities)? How do you know? How is it documented?	
Small Volume Prover (SVP) Calibration, Etc.	• L.F. Eason, NC • Van Hyder, NC • Bill Erickson, MI • Kelley Larson, AZ
Abstract: This session will cover SVP calibration procedure(s), laboratory design, uncertainty analysis, troubleshooting calibration problems, and possible field testing problems. Possible objectives – 1) guidance for those who want to set up for calibrating SVPs and 2) reassurance of validity for others who are simply accepting results for SVP calibrations from accredited labs. This session will be divided into a 4 person panel with each person having one section.	
Mass Panel: Special Topics	• Zeina Jabbour, NIST • Rick Calkins, Rice Lake • Joe Moran, Troemner • Mark Ruefenacht, Heusser-Neweigh
Abstract: This session will be a panel approach with each person discussing 1 or more of the following components of 1) density, 2) magnetism, 3) surface finish and 4) automation and the effect on mass calibrations. Objectives may include sharing information about test procedures, impact on uncertainties, and knowledge of these characteristics over time, how these factors affect mass measurements, uncertainties, or stability and or ways to improve the mass calibration process. This session will be divided into 4 sessions with each speaker having one section.	
Proficiency Testing	• Val Miller, NIST • (and selected participants)
Abstract: This session will provide guidance on spreadsheet analysis methods, basic PT statistical analysis methods, and standardized verbiage tools that have been developed to improve the uniformity and consistency of proficient testing analysis and final reports. Improvements in conducting and preparing full analyses and reports are critical for complying with the WMD PT/ILC quality system.	
Uncertainty – Intermediate	• Tom Vetter, NIST • Will Guthrie, NIST
Abstract: This session will cover additional concepts from the Guide to the Expression of Uncertainty in Measurement. It will build on basic concepts covered by WMD in the metrology seminars and at regional meetings starting with review and providing additional instruction in three key areas: 1) identifying the appropriate measurement equations and linearizing nonlinear measurement equations for combining uncertainties; 2) using partial derivatives as an approach to quantifying the sensitivity of a measurement to its input components and understanding their effective contributions to the combined uncertainty; and 3) using the simplified Kragten spreadsheet approach to quantify, combine, and evaluate uncertainty. Prerequisite: attendance at Uncertainty - Basic session on Tuesday or previous equivalent knowledge (SOP 29, especially Steps 2 and 3, identifying and quantifying uncertainty). Participants should bring a laptop to gain "hands-on" experience with practical applications using Excel to quantify measurement results and uncertainty.	
OIML R111 vs. NIST 105-1 and E 617	• Rick Calkins, Rice Lake • Mark Ruefenacht, Heusser-Neweigh
Abstract: OIML R111was updated and approved at the end of 2004 and became available on-line in 2005. NIST Handbook 105-1 and ASTM E 617-97 should be harmonized and updated as possible with a	

long-term goal of minimizing and eliminating differences among world-wide documentary standards for mass. A portion of the session will compare R111 to NIST Handbook 105-1, showing similarities and differences, and will include recommendations for change. A status report of the ASTM working group to update E 617 will be presented and input requested. In 1997, R111 was to be included as an appendix to E 617-97, but it was not finalized in time for publication. The introduction to E 617-97 indicates that either E 617 or R111 are acceptable for use in the United States. One objective is to improve awareness of the differences among these standards. Another is to present recommendations for changes. Another objective is to gather input from the user community for developing draft updates of HB 105-1 and E 617.	
State Lab Vision & Strategies	• Georgia Harris, NIST • Carol Hockert, NIST
Abstract: This session will be a facilitated focus group to gather customer feedback on the Laboratory Metrology Group (State Laboratory Program) activities in 4 key areas: 1) Laboratory Recognition; 2) Proficiency Testing; 3) Metrology Training; and 4) Documentary Standards Development. We will conduct a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis as a group and consider ideas and priorities for future program directions in each of the 4 programmatic areas.	
Ad-hoc: National Thermometry	• Val Miller, NIST • Mark Ruefenacht, Heusser-Neweigh • Howard Maxim, QC Services
Abstract: This session will present the report/results from thermometry proficiency tests.	
Ad-hoc: National Gravimetric Volume	• Georgia Harris, NIST • Van Hyder, NC
Abstract: This session will present the report/results from gravimetric calibration proficiency tests for 5 gal and 15 gal provers.	
Ad-hoc: Scale Company Accreditation Issues	• Val Miller, NIST
Abstract: This session will be a facilitated discussion to cover some key areas where improvements to uniformity and consistency are needed in scale company accreditations. Key topics to include: 1) uncertainty analyses and reporting; 2) calibration/verification procedures (and ASTM E898 updates); 3) proficiency testing methods and validation of these methods; 4) reporting "scopes" for accredited scale companies.	
Ad-hoc: Master Meters: Draft Specifications	• Dave Thompson, MSI
Abstract: This session will present the results of comparisons of graduated neck type measures with those of a specialized "master meter" approach. Draft performance specifications (a new HB 105-x) will be presented with a goal of having these standards gain acceptance as field standards in weights and measures. Questions and answers on the technology and input on "what is needed" to gain further acceptance will be encouraged.	